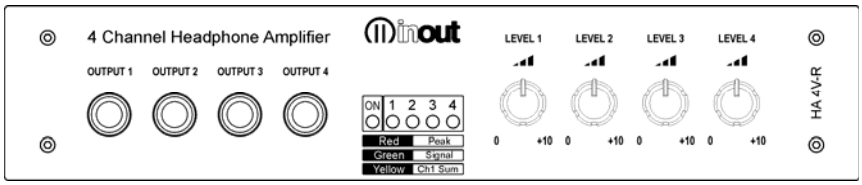
USER MANUAL



HA4V-R

Version 1.0

Warranty

HA4V-R is covered by 24 month warranty on its electronics parts, starting from the date of purchase. This warranty becomes void in case of tampering with the device and in case of work carried out on it by people that were not authorized by the manufacturer or by an authorized dealer. Warranty conditions are those described in the “Warranty Rules”.

NOTE - responsibility of the purchaser: in case of repair under warranty, the device must be packed in order to avoid damage during transport and shipped to the manufacturer together with all the accessories.

Warranty Rules.

1. In order to exercise his warranty rights, the purchaser must include with the device a copy of the evidence of purchase duly stamped by the dealer (bill/invoice).

2. The warranty lasts 24 months on the electronic parts. The warranty is granted at the point of sale or it could be directly requested to the manufacturer.

3. The warranty only covers damage to the product which makes it work badly.

4. Work under warranty will only mean repairing or replacing, free of charge, any parts acknowledged being defective during manufacture or in their material, including labour costs.

5. The warranty does not apply to damage caused by negligence or failure to comply with the instructions, or damage caused by unauthorised people, with a special reference to the external parts.

6. Also, the warranty does not apply to damage caused to the device by connection to unsuitable power sources.

7. The warranty does not cover parts that are subject to wear as a consequence of the use, as well as the chassis if the material is not defective.

8. The warranty does not include transport costs, which will be paid by the purchaser depending on way and time of transport.

9. The warranty expires 24 months after the purchase. In this case, service will be provided charging for the replaced parts, labour costs and transport according to the current rates.

10. In case of any controversy the Court of Law of Venice has the exclusive jurisdiction.

SUMMARY

1. Installation

1.1 Introduction
1.2 Contents of the HA4V-R
1.3 Safety rules

2. Overview

2.1 Rear panel overview
2.2 Front panel overview
2.3 Amplifier configurations general overview

3. Connections and configurations

3.1 Remote volume control – VCA
3.2 CH1 Sum
3.3 Input signal sensitivity
3.4 Ground-lift

4. Specifications

4.1 Technical features
4.2 Mechanical dimensions
4.3 Block diagram

1 Installation

1.1 Introduction

The headphone amplifier HA4V-R was designed to provide absolute stability and reliability, allowing the use with most headphones on the market with any impedance.
Thanks to the high voltage circuitry of the power stages, the HA4V-R can even drive high impedance headphones up to 600 ohms, keeping the distortion at very low levels even with a high power output.

1.2 Contents of the HA4V-R

Contents of the HA4V-R kit:

- n° 1 HA4V-R device
- n° 1 user manual
- n° 1 power supply cable

1.3 Safety rules

Read carefully the following warnings to keep your and others safety, for the right use of the device and to avoid warranty invalidation.

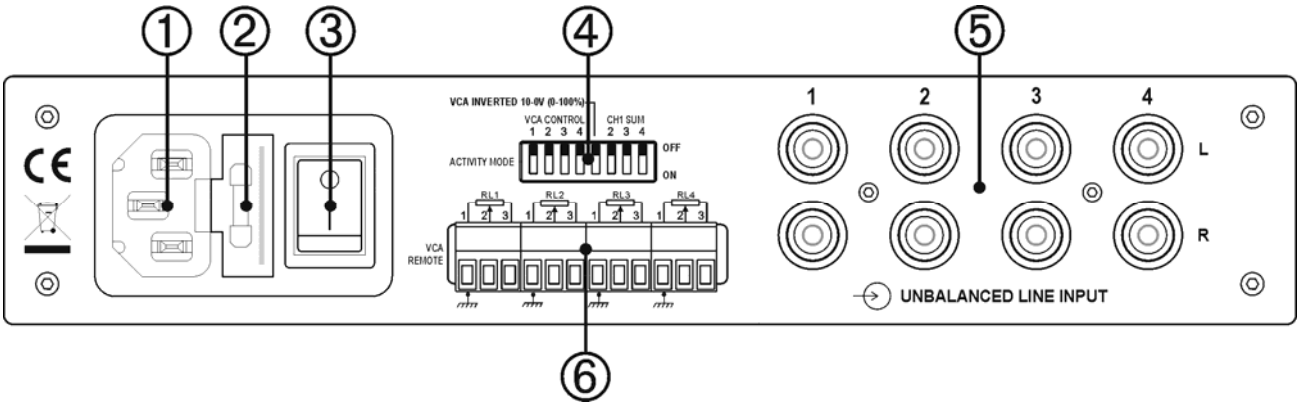
1. Do not expose the device to rain or high humidity. Protect the device from accidental liquid penetration, if it happens, stop using the device and apply to qualified or authorized personnel.
2. Do not insert things into the device through the openings to avoid risk of fire or electric shock.
3. Before connect the amplifier, ALWAYS verify the ground connection as requested by the law.
4. Disconnect the device from the light socket before make any operation for the internal device configuration.
5. If the original power cord is waste or deteriorate, replace it with a similar one.
6. Disconnect the device from the light socket before make cleaning operations. Clean the device with a dry and soft cloth. Do not use liquids or spray that can contain flammable elements.
7. Device handling must take place only when all the cables have been disconnected.
8. Device maintenance must be done only by qualified personnel.
9. For any requirement or technical information contact InOut or authorized personnel.

OBSOLETE DEVICES DISPOSAL

- This picture means that the device is European Directive 2002/96/EC compliant.
- All electronic and electric devices should be disposed separately from the normal garbage, by specific gathering plants designated by the government or by local authorities.
- Correct disposal of obsolete devices, of the accessories and especially of the batteries, contribute to prevent possible negative consequences on human health and on the environment.
- For detailed information on obsolete devices disposal, contact the municipality, the garbage disposal service or the store where you bought the device.

2 Overview

2.1 Rear panel overview



1) AC mains power connector, use the appropriate supplied cable.

2) Protection fuse on mains power

3) Mains power switch

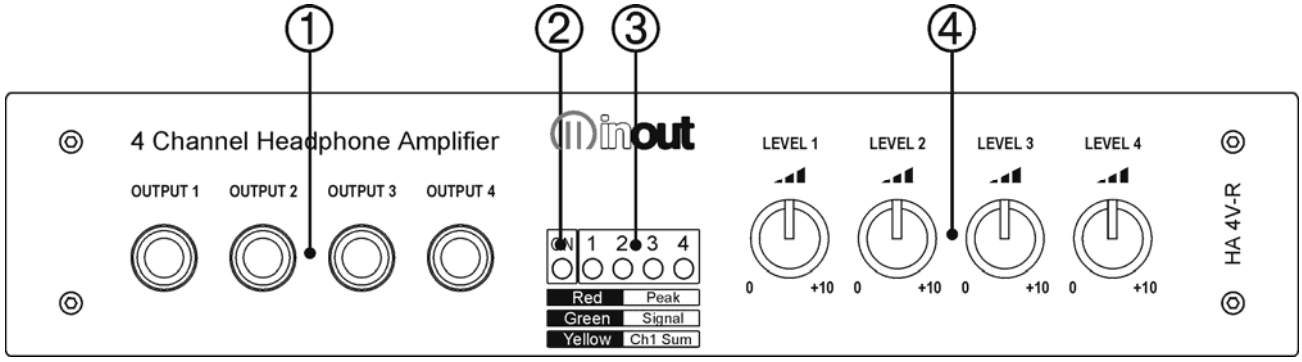
4) Activity mode switch:

- To enable the external volume adjustment (VCA) for each channel.
- To reverse the VCA
- To switch the input channels 2-3-4 with the same audio input of channel 1.

5) CH 1-2-3-4 unbalanced stereo input connectors

6) External volume adjustment potentiometers connector (VCA)

2.2 Front panel description



1) Headphones stereo jack connectors

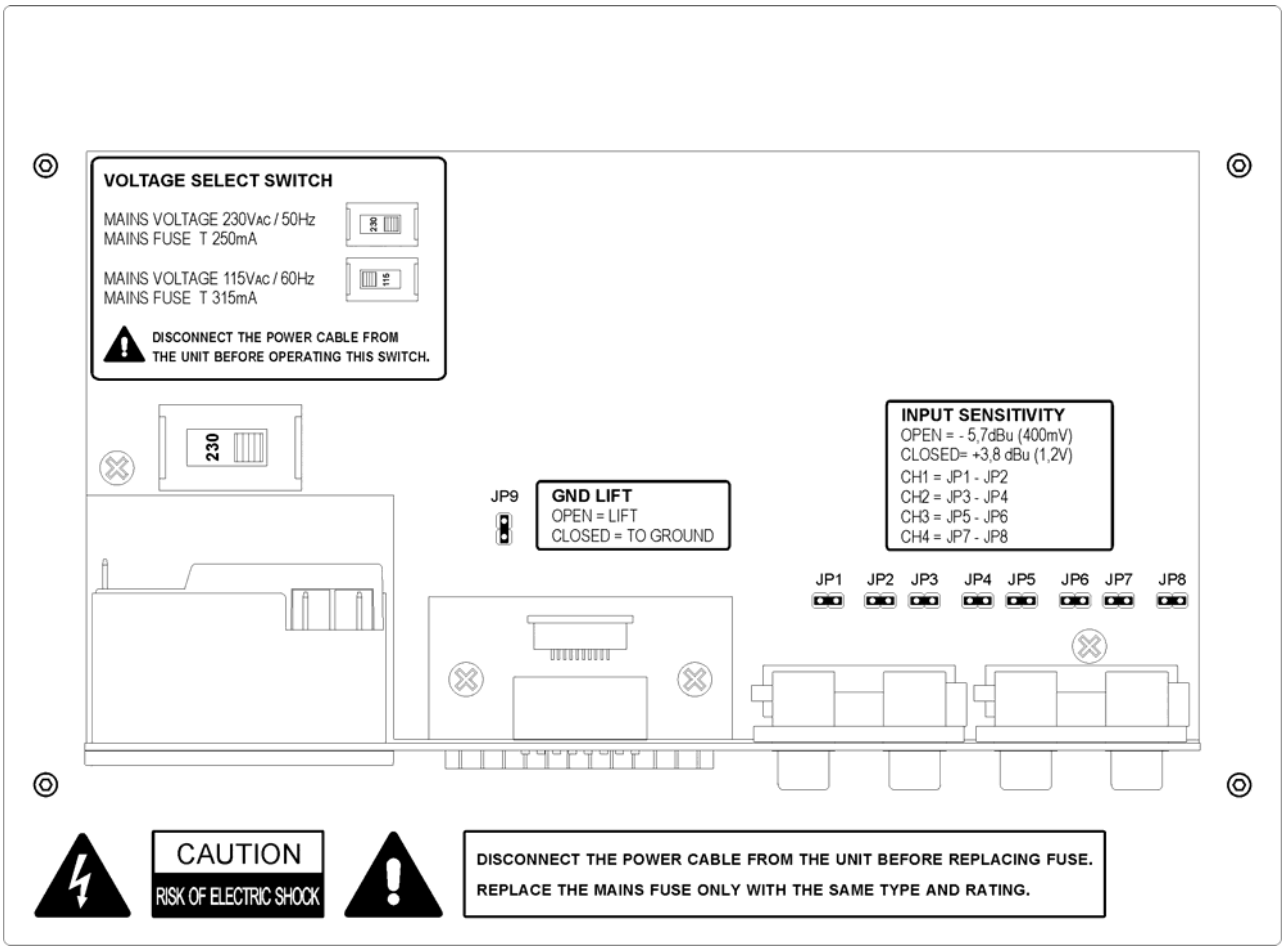
2) “Device ON” LED, powered device.

3) Two-colour LED with indication purpose:

LED		*Description*	*Indicating*
off	=	input signal not present or too low	
green	=	input signal present	SIGNAL
red	=	input signal too high	PEAK
Yellow (POWER ON)	=	When blinking indicates that the input channels 2-3-4 are switched on the channel 1 signal input	CH1 SUM

4) Channels 1-2-3-4 volume adjustment knobs

2.3 Power amp configurations general overview


VOLTAGE SELECT SWITCH
MAINS VOLTAGE 230Vac / 50Hz
MAINS FUSE T 250mA
MAINS VOLTAGE 115Vac / 60Hz
MAINS FUSE T 315mA
DISCONNECT THE POWER CABLE FROM THE UNIT BEFORE OPERATING THIS SWITCH.
230
JP9
GND LIFT
OPEN = LIFT
CLOSED = TO GROUND
INPUT SENSITIVITY
OPEN = - 5,7dBu (400mV)
CLOSED= +3,8 dBu (1,2V)
CH1 = JP1 - JP2
CH2 = JP3 - JP4
CH3 = JP5 - JP6
CH4 = JP7 - JP8
JP1 JP2 JP3 JP4 JP5 JP6 JP7 JP8
CAUTION
RISK OF ELECTRIC SHOCK
DISCONNECT THE POWER CABLE FROM THE UNIT BEFORE REPLACING FUSE.
REPLACE THE MAINS FUSE ONLY WITH THE SAME TYPE AND RATING.

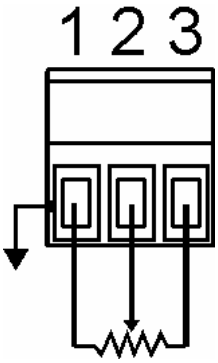
3 Connections and configurations

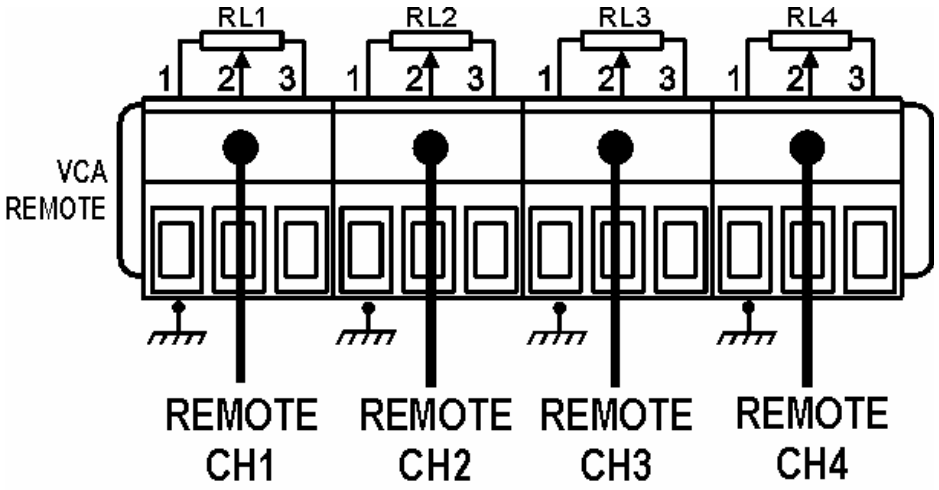
3.1 Volume remote control - VCA

There is one connector for each single channel on the amplifier back, where connect a potentiometer to allow volume remote control.
To enable the remote control, set the ACTIVITY MODE switch to ON.

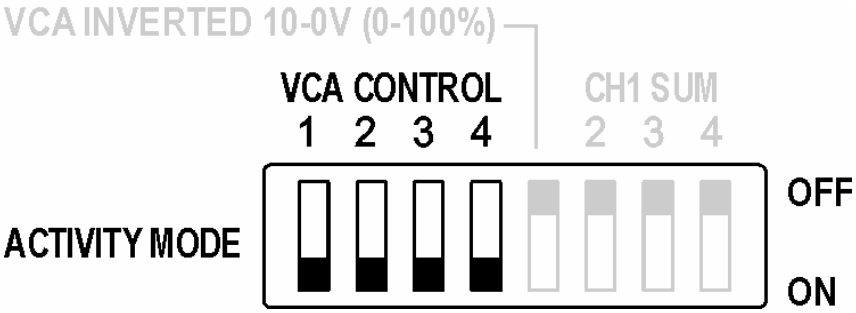
WARNING: This mode disables the front volume controls.

VOLUME REMOTE CONTROL

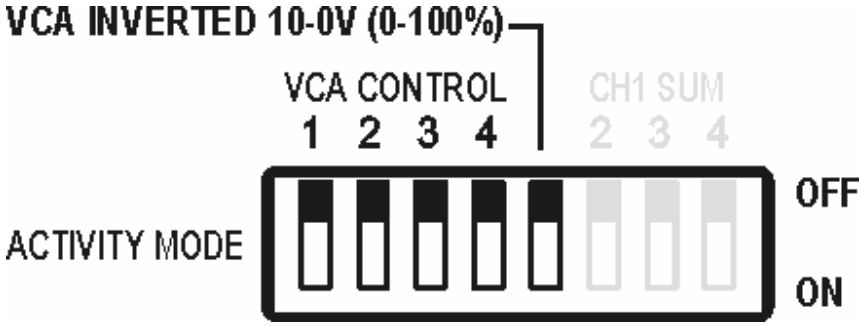


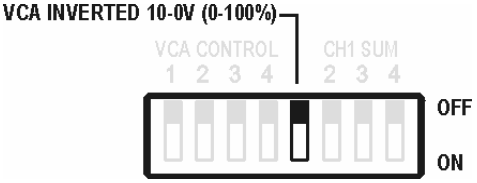
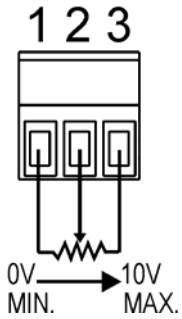
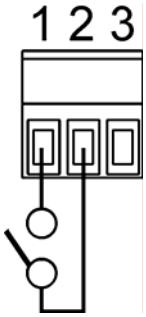
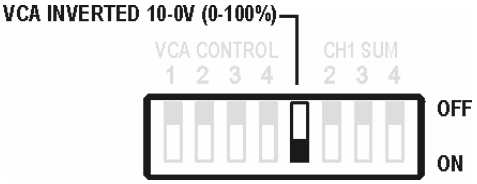
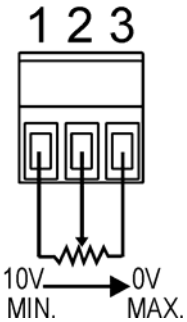
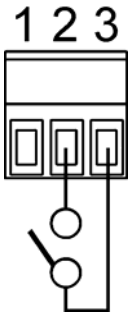


VOLUME REMOTE CONTROL CONFIGURATION



VOLUME REMOTE CONTROL CONFIGURATION

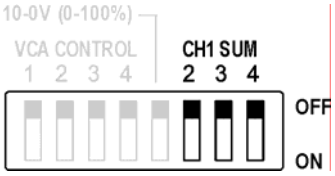


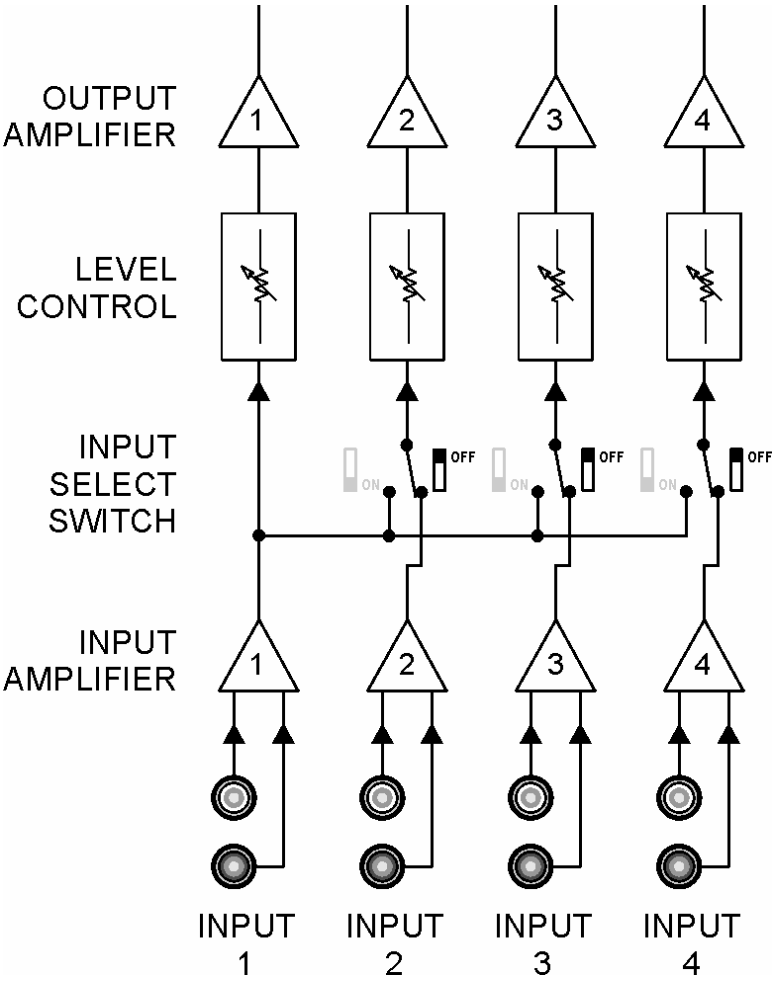
JUMPER	*VCA*		*MUTE*
		***NORMAL 0-10V*** *(DEFAULT)*	
		***REVERSE 10-0V***	

3.2 CH1 SUM

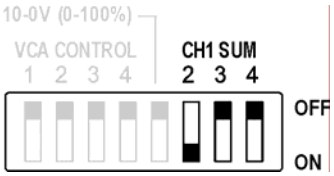
On the back of the Amplifier there's a switch that allows you to switch the input 1 signal to the other channels to avoid additional external links.
To enable CH1 SUM set the ACTIVITY MODE switch to ON for each single channel.

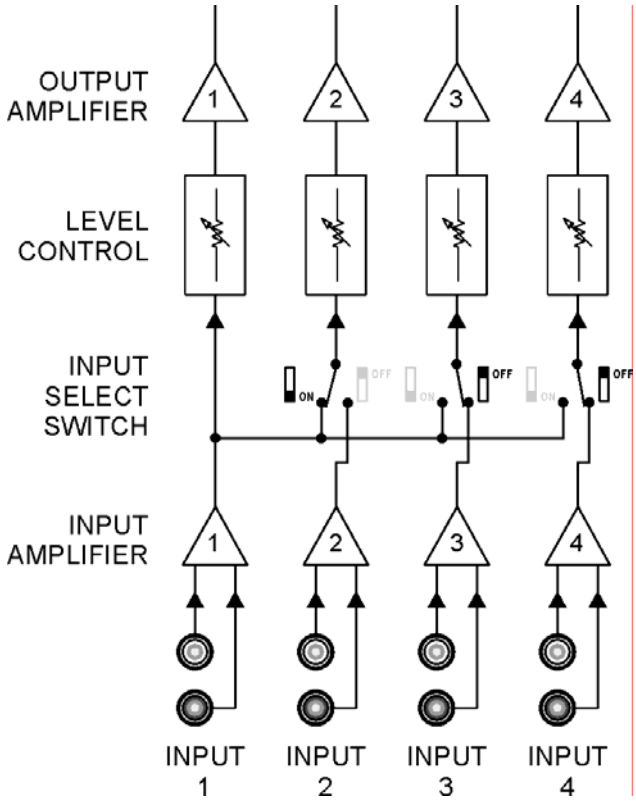
INDEPENDENT CHANNELS INPUT SIGNAL



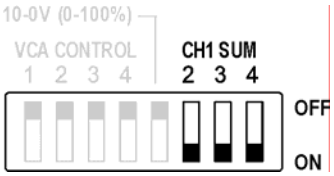


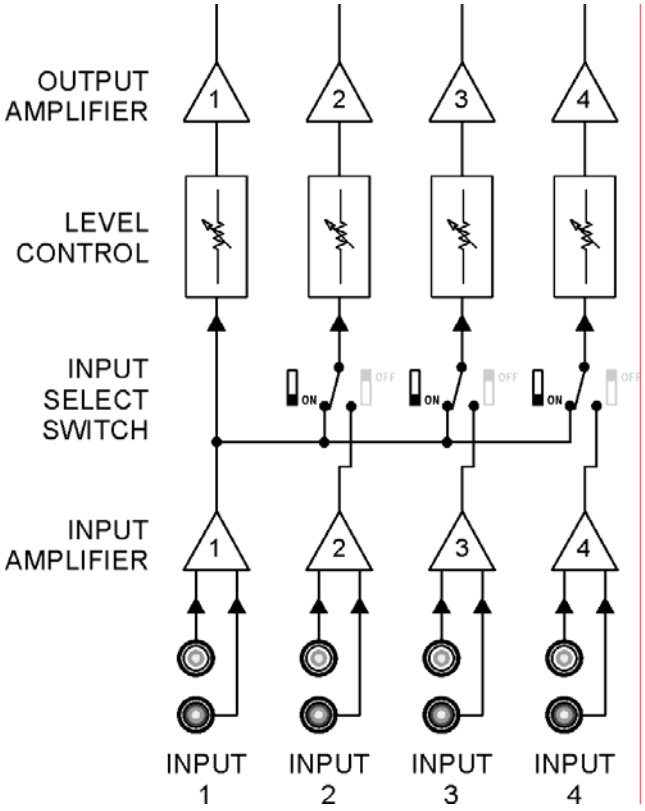
SWITCHING INPUT 1 SIGNAL TO CHANNEL 2





SWITCHING INPUT 1 SIGNAL TO CHANNELS 2 - 3 - 4





3.3 Input sensitivity

The amplifier has a circuit inside that allows selecting a different sensitivity for the audio signal incoming to accept low output signal sources.
To enable a different sensitivity remove the cover and set the jumpers as shown in the following picture.

IMPORTANT: ***use both jumpers for each channel.***

INPUT SIGNAL SENSITIVITY SETTING

WITHOUT JUMPER = -5,7dBu

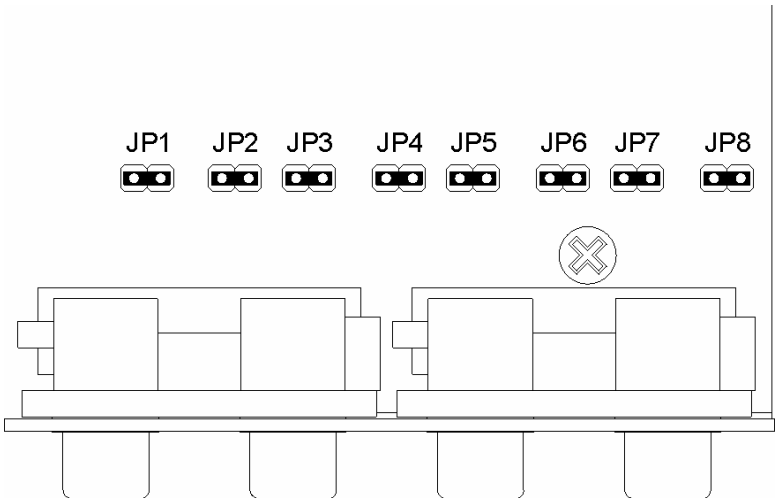
WITH JUMPER =+3,8dBu
(DEFAULT)

CH1 = JP1 – JP2

CH2 = JP3 – JP4

CH3 = JP5 – JP6

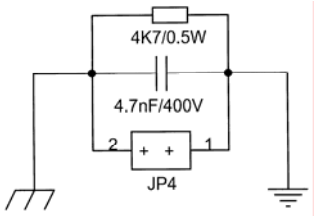
CH4 = JP7 – JP8

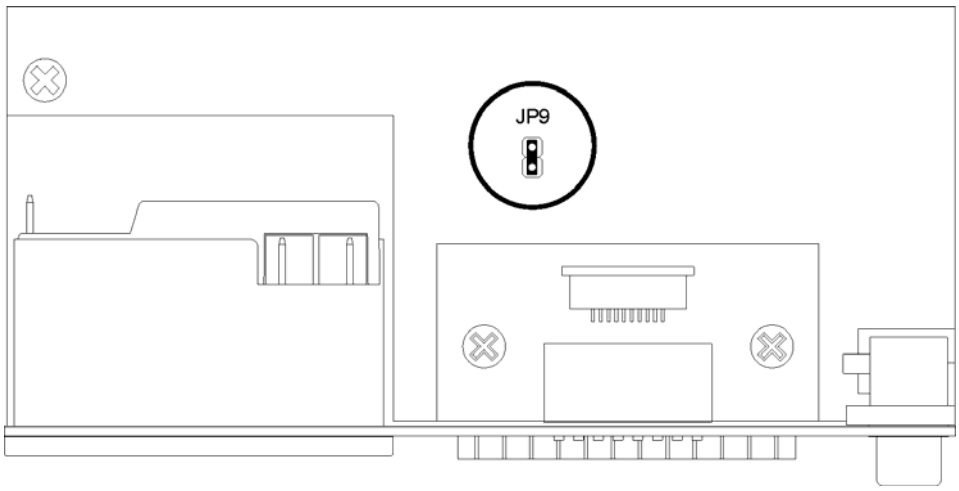


3.4 GROUND-LIFT

If there is low frequencies noise on the speakers due to ground loops, it's advisable to set JP9 jumper to OPEN position; that means to split audio ground from chassis ground.

GROUND LIFT CONFIGURATION





4 Specifications

4. 1 Technical features

Mains power……..…. : 230 Vac / 50Hz or 115 Vac / 60 Hz
Consumption (during standby)….. : 1 W
Mains protection……..…. : 2,50A retard fuse (3,15A retard fuse for 115Vac)
Maximum Output Level…….. : 60 mW (@ 32 ohm load) 1kHz THD+N= 1%
: 130 mW (@ 600 ohm load) 1kHz THD+N= 1%
Frequency response……..….. : 20 ~ 20.000 Hz (±0,1dB)
Signal to noise ratio……..... : 95dB.
Harmonic distortion……..... : < 0,1%
RMS Level / Gain……..…….. : 1,9 Vrms / +5,5 dBm (@ 32 ohm load)
: 10,5 Vrms / +20,5 dBm (@ 600 ohm load)
Input impedance……..…. : 10 Kohms Unbalanced
Input sensitivity……..... : +3,8dbu (1,2v) e –5,7dbu (400mV)
Classification……..…….. : IP 30 in the strength of liquid and powders permeation.
Dimensions……..…… : 216x158x44mm.
Weight…….…… : 1.5 Kg.

CEE directive compliant:

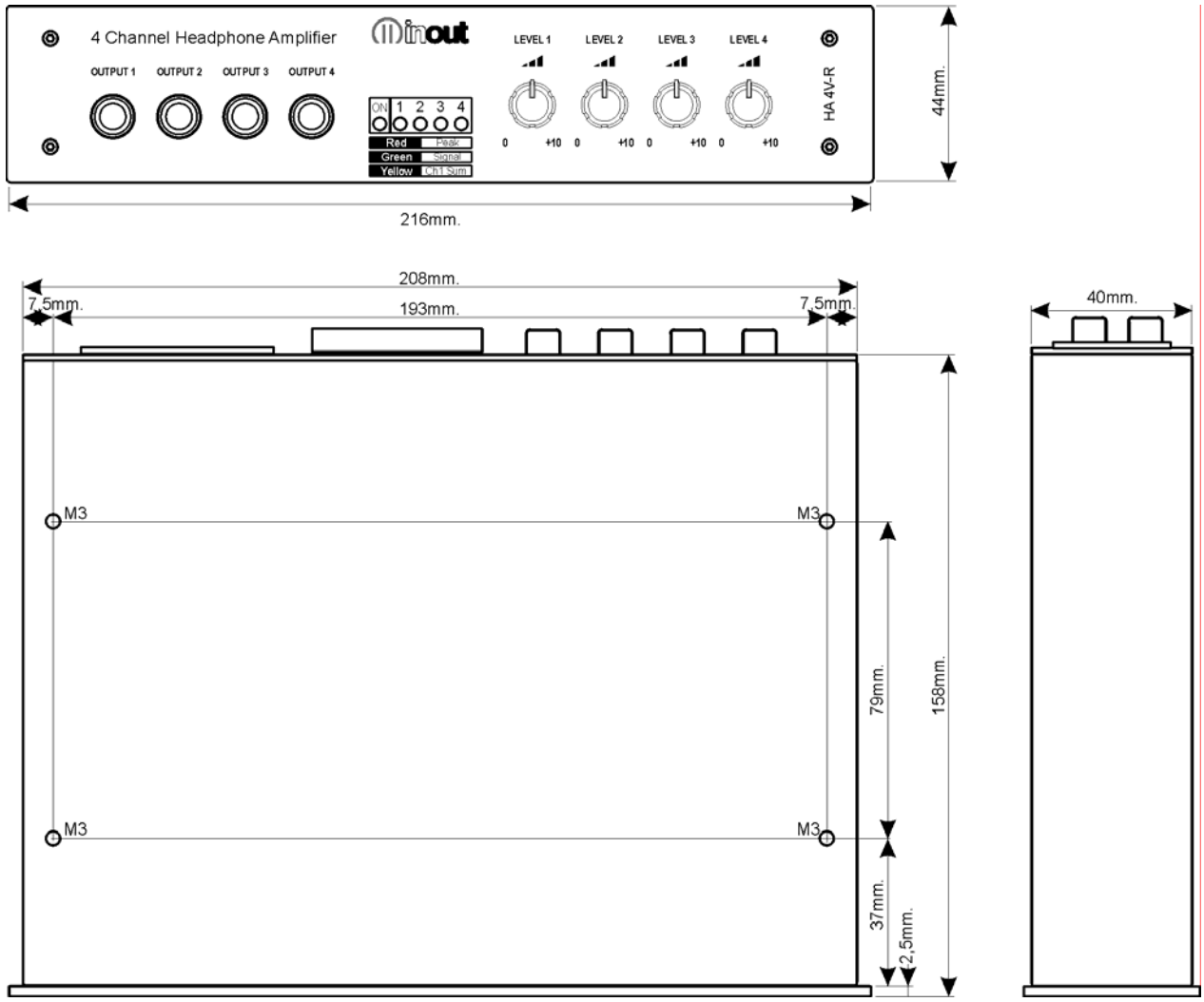
Safety……..……..…..: 2006/95/CEE
Electromagnetic compatibility..... : 2004/108/CEE

Applied standards:

Safety	: EN 60065 Safety limitation for electronic devices and their accessories connected to the house power grid and analogous general use.		
Electromagnetic compatibility for audio devices:	- Emissions	- Harmonics	: EN 61000-3-2
		- Voltage fluctuations	: EN 61000-3-3
		- Radio interferences	: EN 55013
			: EN 55022
	- Immunity		: EN 55020
			: EN 55024

CE Manufactured by: inout Noventa di Piave (VE) - ITALY

4.2 Mechanical dimensions



4.3 Block diagram